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09/226,597	01/07/1999	JULIO PIMENTEL	585-017-84	9844

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EXAMINER
GABEL, GAILENE

ART UNIT	PAPER NUMBER
1641	17

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/226,597	Applicant(s) PIMENTEL, JULIO
	Examiner Gailene R. Gabel	Art Unit 1641

-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☒ Interview Summary (PTO-413) Paper No(s). *15,16* .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Request for Reconsideration

1. Applicant's request for reconsideration filed 10/24/01 in Paper No. 14 is acknowledged and has been entered. Applicant's submission of 37 C.F.R. § 1.132 in Paper No. 14 is, likewise, acknowledged. Currently, claims 1-9 are pending and under examination.

New Grounds of Rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is vague and indefinite for being incomplete. Specifically, the preamble in claim 1 recites a method for inhibiting body weight gained after eating but the body of the claim does not set forth any limitation encompassing what performs the function or how inhibiting the amount of body weight gained is effected.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

New Matter

3. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In this case, the specification does not appear to provide any literal support for the recitation of "inhibiting body weight gained". In page 2, lines 7-9 of the specification, Applicant discloses that the amount of body weight gained by an animal as a result of eating is **decreased** by including encapsulated antilipase antibodies. In page 3, lines 24-26 of the specification, Applicant discloses that the claimed invention "provides decreased body weight gain per unit of food". In Example 5 at page 5 of the specification, data appears to show substantial decrease of body weight gained by antilipase antibody treated rats. In page 6 of the specification, Applicant discloses that the body weight gained by antilipase antibody treated rats is "much less" than the control group. Furthermore, none of the originally filed claims set forth the recitation in question. Recitation in the claims lacking literal support in the specification or originally filed claims constitutes new matter.

Scope of Enablement

4. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method that reduces the amount of body weight

gained in rats after eating a high fat diet, does not reasonably provide enablement for a method that inhibits the amount of body weight gained in any and all animals after eating as recited in claim 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Enablement requires that the specification teach those skilled in the art to make and use the invention without undue experimentation. Factors to be considered in determining, whether a disclosure would require undue experimentation include 1) the nature of the invention, 2) the state of the prior art, 3) the predictability or lack thereof in the art, 4) the amount of direction or guidance present, 5) the presence or absence of working examples, 6) the quantity of experimentation necessary, 7) the relative skill of those in the art, and 8) the breadth of the claims.

The nature of the invention- the invention is directed to a method for reducing the amount of body weight gained after eating, comprising feeding to an animal an effective amount of a liposome-encapsulated immunoglobulin against lipase.

The state of the prior art- the prior art of record fails to disclose a method that is applicable to any and all animals wherein liposome encapsulated immunoglobulin specific for lipase is administered to the animal by ingestion after feeding to reduce body weight gain.

The predictability or lack thereof in the art- there is no predictability based on the instant specification that the claimed method will work in animals other than rats shown in the examples where the rats are fed a high fat diet.

The amount of direction or guidance present- appropriate guidance is provided by the specification for the claimed method to work in rats that are fed a high fat diet. However, the specification fails to provide any guidance to enable the claimed method to function in animals other than rats subjected to a high fat diet.

The presence or absence of working examples- working examples are provided in the specification that show a reduction in weight gain in rats being fed a high fat diet using the claimed method. There are no working examples that show analogous results in other animals that are fed non-regulated diets, i.e. any diet other than a high fat diet, which are encompassed by the broad scope of the instant claims.

The quantity of experimentation necessary- it would require undue amount of experimentation for the skilled artisan to make and use the method as claimed.

*The relative skill of those in the art-*the level of skill in the art is high.

The breadth of the claims- as recited, the instant claims are directed to a method that is applicable to any and all animals without any regard to what is fed to the animal. As recited, the instant method will inhibit body weight gain in any animal regardless of what the animal is fed by the ingestion of an effective amount of a liposome encapsulated immunoglobulin against lipase.

While the specification exemplifies a reduction in weight gain in rats that have been fed a high fat diet using the claimed method, the specification does not show any working examples of the claimed method in any other animals that have been fed a non-regulated diet, i.e. any diet other than a high fat diet. The fact that the claimed method appears to work in rats is not sufficient to enable the breadth of the claimed

method for any and all animals because a rat is not considered an acceptable animal model for all animals. The specification does not establish a direct correlation between rats and all animals which would lead the skilled artisan to say that if the claimed method works in rats then it should work in all animals to enable the breadth of the claimed method. As a specific example, the specification lacks any correlation between rats and humans. The specification does not provide any teaching that suggests that rats can be considered an acceptable animal model for weight gain or reduction of weight or inhibition of weight gain in humans. Page 3 of the specification refers to the controlling of weight in mammals, avians, and any animal having a pancreas or that secretes lipase but provides no showing that the claimed method works in any of these animals. While it is not necessary to show working examples for every possible embodiment, there should be sufficient teachings in the specification that would suggest to the skilled artisan that the breadth of the claimed method is enabled. This is not the case in the instant specification. Thus, the claimed method is only enabled for rats.

With respect to the diet fed to the animal, the claimed method does not recite any limitation as to what is fed to the animal that is undergoing the claimed method. Claim 1 merely requires the animal to eat and the claimed method would inhibit body weight gain. The examples in the specification show a high fat diet being fed to the rats which resulted in a reduction in weight when subjected to the claimed method. The breadth of the claims encompass a diet high in sugars, protein, and carbohydrates. The claimed method would not work in an animal that was fed a diet high in sugars, protein, and carbohydrates because anti-lipase immunoglobulin would have no effect on the

breakdown and storage of sugars, protein, and carbohydrates. Lipase plays no role in the breakdown and storage of sugars, protein, and carbohydrates. Thus, the animal would still gain weight when fed the liposome encapsulated anti-lipase immunoglobulin. Thus, the claimed method is only enabled for animals, specifically rats, that have been fed a high fat diet.

In view of the teachings of In re Wands, 8 USPQ2d 1400, it has been determined that the level of experimentation required to enable the breadth of the claims is undue. It has been set forth above that 1) the experimentation required to enable the claimed method for any and all animals that are fed a non-regulated diet, i.e. any diet other than a high fat diet, would be great as 2) there is no experimental evidence provided that would indicate that the claimed method would work in animals, other than rats, that have been fed a diet other than a high fat diet; 3) there is no proper guidance that shows that rats are acceptable animal models for any and all animals in the instant specification, 4) the nature of the invention is a method that would inhibit weight gain in an animal after eating by ingesting a liposome encapsulated immunoglobulin specific for lipase, 5) the relative skill of those in the art is high, yet 6) the state of the prior art has been shown to be unpredictable as evidenced by the fact that no prior art has been cited that shows inhibition in body weight gain after eating in animals by ingesting liposome encapsulated immunoglobulin specific for lipase, and lastly 7) the claims broadly recite a method for inhibiting weight gain in any animal after eating any diet without specifically stating how this can be done without undue experimentation.

Therefore, it is maintained that one of ordinary skill in the art could not make and use the invention as claimed without undue experimentation.

Enablement

5. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the mode of release, location of release, and the viability of the encapsulated immunoglobulins against lipase after release from liposomes, so as to inhibit weight gain to enable claim 1 are not described in the specification. The mode of action and function of immunoglobulins against lipase in relation to lipase antigen, in order to inhibit weight gain in any and all animals as required by claim 1 is not described in the specification. The structure of lipase antigen from which antilipase antibodies are generated from, so as to enable interspecies cross-reactivity, i.e. mammalian and avian, for use in totally inhibiting weight gain in any animal to enable claim 1, is not characterized and fully described in the specification.

Enablement requires that the specification teach those of skill in the art to make and use the invention without undue experimentation. Factors to be considered in determining, whether a disclosure would require undue experimentation include 1) the nature of the invention, 2) the state of the prior art, 3) the predictability or lack thereof in the art, 4) the amount of direction or guidance present, 5) the presence or absence of

working examples, 6) the quantity of experimentation necessary, 7) the relative skill of those in the art, and 8) the breadth of the claims.

The nature of the invention- the invention is directed to a method for reducing the amount of body weight gained after eating, comprising feeding to any animal an effective amount of a liposome-encapsulated immunoglobulin against lipase.

The state of the prior art- the prior art of record fails to disclose a method that is applicable to any and all animals wherein liposome encapsulated immunoglobulin specific for lipase is administered to the animal by ingestion after feeding to reduce body weight gain.

The predictability or lack thereof in the art- there is no predictability based on the instant specification that the claimed method will work in any and all animals.

The amount of direction or guidance present- the specification fails to provide any guidance to enable the claimed method to function in any and all animals.

The presence or absence of working examples- There are no working examples that show reduction in weight gain in any and all animals that are fed non-regulated diets, as required by claim 1.

The quantity of experimentation necessary- it would require undue amount of experimentation for the skilled artisan to make and use the method as claimed.

The relative skill of those in the art-the level of skill in the art is high.

The breadth of the claims- as recited, the instant claims are directed to a method that is applicable to any and all animals that are fed immunoglobulins against lipase that is incorporated into food. As recited, the instant method will inhibit body weight gain in

any animal regardless of the type or species of the animal, the physiological make-up of the animal, and the status of the immunoglobulin against lipase after ingestion.

The mode of release, location of release, and the viability of the encapsulated immunoglobulins against lipase after release from liposomes, so as to inhibit weight gain to enable claim 1 is not described in the specification. A general comment at page 1, lines 9-10 in the specification states that lipases hydrolyze a portion of dietary lipid, i.e. triacyglycerol, to fatty acids and glycerol in the gastrointestinal tract. At page 2, lines 4-5 of the specification, it is stated that an effective amount of liposome encapsulated immunoglobulins against lipase can be included in food to regulate the amount of body weight of an animal. The specification exemplifies at Example 1 a showing of lesser increase in body weight gain of rats after being fed food that includes liposome encapsulated immunoglobulin against lipase for one week; i.e. control rats gained 11 grams and antilipase antibody rats gained 7 grams. However, nowhere in the specification provides a teaching of where the immunoglobulins against lipase are released. Nowhere in the specification describes the nature of the immunoglobulins against lipase after release from liposome in the digestive tract, if indeed, they are released in the digestive tract, and their viability after exposure to gastric juices, so as to effect total inhibition of body weight gained by any animal as required by claim 1. Specifically, at page 4, line 10 of the specification, Applicant states that antibodies may become inactive when encountering the acidity of the stomach. At page 2, lines 1-3, it is further stated that the stability of any immunoglobulin in the digestive tract is increased with the aid of liposome encapsulation. At page 2, lines 27-28, it is stated

that antibody can be heat treated to improve stability. Based on these teachings, a skilled artisan would only reasonably conclude that some level of function of the immunoglobulin against lipase is affected by gastric elements and the potential to maintain adequate concentration and functionality of immunoglobulins against lipase, to effectively reduce weight gain, is compromised. Therefore, based on Applicant's limited disclosure, one skilled in the art would not know how to inhibit weight gain in any animal to enable claim 1, with the knowledge only of encapsulating immunoglobulins against lipase into liposomes for incorporation into food solely for the purpose of protecting and minimizing the effect of gastric juices to the antibodies.

The mode of action and function of immunoglobulins against lipase in relation to lipase antigen, in order to inhibit weight gain in any animal to enable claim 1 is not described in the specification. Throughout the specification, general comments on the ability of antilipase antibodies to decrease the amount of body weight gained by an animal, if included in feed, are set forth by Applicant. In page 2, lines 7-9 of the specification, Applicant discloses that the amount of body weight gained by an animal as a result of eating is **decreased** by including encapsulated antilipase antibodies. In page 3, lines 24-26 of the specification, Applicant discloses that the claimed invention "provides decreased body weight gain per unit of food". In Example 5 at page 5 of the specification, data appears to show substantial decrease of body weight gained by antilipase antibody treated rats. In page 6 of the specification, Applicant discloses that the body weight gained by antilipase antibody treated rats is "much less" than the control group. A general comment at page 1, lines 9-10 in the specification states that

lipases hydrolyze a portion of dietary lipid, i.e. triacyglycerol, to fatty acids and glycerol in the gastrointestinal tract. However, nowhere in the specification describes the mode of action of these immunoglobulins against lipase. Nowhere in the specification describes that the mode of action of the immunoglobulins against lipase, is with lipase antigen secreted from the gastrointestinal tract or pancreas. The specification does not provide a teaching of an interaction, i.e. binding or reaction, that takes place between immunoglobulins against lipase and lipase antigen in the gastrointestinal tract to inhibit weight gain. There is no description of how the immunoglobulins against lipase, if released in the GI tract, are absorbed or caused to migrate across intestinal wall to bind or react with plasma lipase antigen to systemically inhibit weight gain. Alternatively, the specification provides no teaching of how immunoglobulin binding to lipase, if present, causes the active site of the antigen to be inhibited. Specifically, immunological binding of antilipase antibodies to lipase does not equate to blocking the catalytic epitope of lipase antigen. Therefore, the capability to generate anti-lipase antibodies from lipase of unknown origin that can act upon lipase antigen in any animal, to react or bind in such a way that its catalytic epitope is blocked, either in the GI tract or systemically in the plasma and inhibit weight gain, is an unpredictable task. Based on Applicant's limited disclosure, one skilled in the art would not know how to make and use immunoglobulins against lipase that inhibit weight gain in any animal to enable claim 1, without undue experimentation.

The structure of lipase antigen from which immunoglobulins against lipase are generated from, so as to enable interspecies cross-reactivity, i.e. mammalian and avian,

to totally inhibit weight gain in any animal as required by claim 1, is not characterized and described in the specification. General comments on the development and generation of antilipase polyclonal antibodies from avian eggs are insufficient to establish the nature or potency of the antibodies to provide interspecies cross-reactivity with lipase of any animal for purposes of inhibiting weight gain. Antibodies generated from undefined mammalian lipase sources, i.e. bovine, may not necessarily have specificity for and cross-reactivity with any other lipase of mammalian species, i.e. human or avian species, so as to inhibit weight gained after consumption of food. The instant specification fails to establish a correlation between lipase of humans and lipase of avian or amphibian species, for example. Generation of antibodies that react or bind with lipase of any and all species, specifically at its catalytic site, so as to inhibit weight gain in any animal, would appear to be an unpredictable task. Further, physiological function and metabolism between individuals and between species may account for enhanced or reduced functional potency of the immunoglobulins against lipase in reacting with a given lipase structure. Thus, one skilled in the art would reasonably conclude that even if one has knowledge in generating antilipase antibodies from different species such as set forth in Applicant's disclosure, some level of function of the anti-lipase antibodies in inhibiting weight gain can be affected by the structure of the lipase antigen that is endogenous to any given species. Based on Applicant's limited disclosure, one of skill in the art would not know how to make and use immunoglobulins against lipase that have a potential to exhibit absolute specificity, reactivity and

functionality to inhibit body weight gained in any animal after feed consumption, without undue experimentation.

In view of the teachings of In re Wands, 8 USPQ2d 1400, it has been determined that the level of experimentation required to enable the breadth of the claims is undue. It has been set forth above that 1) the experimentation required to enable the claimed method for any and all animals that have been fed a food composition containing liposome encapsulated immunoglobulins against lipase, would be great as 2) there is no experimental evidence provided that would indicate that the claimed method would work in any and all animals; 3) there is no proper guidance that shows that any anti-lipase antibody can inhibit weight gain in any and all animals, 4) the nature of the invention is a method that would inhibit weight gain in an animal after eating by ingesting a liposome encapsulated immunoglobulin specific for lipase, 5) the relative skill of those in the art is high, yet 6) the state of the prior art has been shown to be unpredictable as evidenced by the fact that no prior art has been cited that shows inhibition in body weight gain after eating food containing liposome encapsulated immunoglobulin specific for lipase, and lastly 7) the claims broadly recite a method for inhibiting weight gain in any animal after eating any diet without specifically stating how this can be done without undue experimentation.

Therefore, it is maintained that one of ordinary skill in the art could not make and use the invention as claimed without undue experimentation.

Declaration Under § 1.132

6. Applicant's submission of 132 Declaration is not persuasive. Specifically, Applicant's declaration attempts to explain only the convenience of using rats for experimentation in the claimed invention but fails to address that the rat is not an acceptable animal model for all animals to enable the scope of claim 1. Further, in addressing fat content, Applicant explains how the dosage of fat content was increased by 30% to exemplify effect of anti-lipase antibodies in inhibiting weight gain. However, Applicant fails to address the effect of anti-lipase antibodies in types of diet wherein sugar intake is increased or protein intake is increased in order to enable the scope of claim 1.

Prior Art

7. Currently, claims 1-9 are clear of prior art.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Gabel whose telephone number is (703) 305-0807. The examiner can normally be reached on Monday to Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Fridays from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le, can be reached on (703) 308-4027. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Christopher L. Chin

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